

# **EXHIBIT 21**

## Sonos UI Specification

### Zone Scenes

Also called:

Zone Configurations

Version 001

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*About this document*

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UNITED STATES DISTRICT COURT  
NORTHERN DISTRICT OF CALIFORNIA

### TRIAL EXHIBIT 6545

CASE NO. 3:20-cv-06754-WHA

DATE ENTERED \_\_\_\_\_

BY \_\_\_\_\_

DEPUTY CLERK

**Sonos UI Specification: Zone Scenes****1 Introduction**

The Zone Scene feature allows the user to arrange the zones into groups using one single command. This is similar to the current Party Mode setting that is available. However, the Zone Scene feature is much more flexible and powerful.

Currently in the Sonos UI, zone groups are created by manually linking zones one at a time until the desired zone grouping is reached.

For Example

Start with **Living Room**

- Link the Kitchen to the Living Room to make a group of (**Living Room + Kitchen**)
- Then link the Den to the (**Living Room + Kitchen**) to make a group of (**Living Room + Kitchen + Den**)

The Zone Scene feature would allow the user to create a group of (**Living Room + Kitchen + Den**) with one command.

**1.1 Setting a Zone Scene****1.1.1 Simple Scenes**

Simple scenes allow the user to set up a single zone group per scene.

*For example:*

“Morning Scene” would group Bedroom + Den + Dining Room, but would leave all other zones in the house untouched.



Note: Zones do not need to be separated before the Scene is invoked.

**1.1.2 Advanced Scenes**

**Sonos UI Specification: Zone Scenes**

User can define multiple groups to be gathered at the same time.

For example: "Evening Scene" should link the following zones

- **Group1**
  - o Bedroom
  - o Den
  - o Dining Room
- **Group 2**
  - o Garage
  - o Garden
- **And finally**, Bathroom, Family Room and Foyer should be separated from any group if they were part of a group before the Zone Scene was invoked.



Note: Zones do not need to be separated before the Scene is invoked.

**Sonos UI Specification: Zone Scenes**

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**1.1.3 What happens to the Music that's already playing when a Zone Scene is started.**

If no music is playing in any Zone – then the zones will simply link in a group.

If music is playing in one or more zones there are several possibilities (TBD)

1. The Music Queue in the zone group that was formed by the Zone Scene will be empty. In other words – the music will stop in any room that is part of the Zone Scene. This is the simplest solution, but may lead to frustration.
2. The user gets to choose from which of the joining\* Queues the new zone group should play. This could be in the form of a dialog:

**What should the new Zone Group play?**

<input type="radio"/> No Music
<input type="radio"/> Track 1
<input type="radio"/> Track 2
<input type="radio"/> Radio Station A

Note that this method would only be useful (and possible) with simple Zone Scene grouping. With Advanced Zone Scene groupings, this dialog would become much too complicated.

3. In the case where only one of the zones in the new group was playing music, the new group should take the music (and Queue) of that zone.

**Sonos UI Specification: Zone Scenes**

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**2 Invoking a Scene**

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There are various user Interface methods for invoking a configuration on a Handheld Controller or Desktop Controller

**2.1 Handheld Controller****2.1.1 Method 1: Include Scenes in the Zone menu**

**Sonos UI Specification: Zone Scenes****2.1.2 Method 2: Zone Scenes as a soft button**

The Link/Drop Zone commands are placed under one softkey and the middle softkey now becomes “Scenes”. Pressing the scene softkey will show the Scene menu where all the available scenes are shown.



TBD: We could remove Pause All (and place it somewhere else. This would allow us to put Zone Scenes on the right soft button).

**Sonos UI Specification: Zone Scenes****2.1.3 Method 3. Zone Scenes as part of “Link Zones” Dialog.**

**Sonos UI Specification: Zone Scenes****2.2 Desktop Controllers****2.1.1 Method 1: As part of 'Zones' application menu****2.1.2 Method 2: As part of the Zones panel**

**Sonos UI Specification: Zone Scenes****3 Scene Setup****3.1 Handheld Controller**

It is not expected that the Zone Scenes should be set up using the Handheld Controller

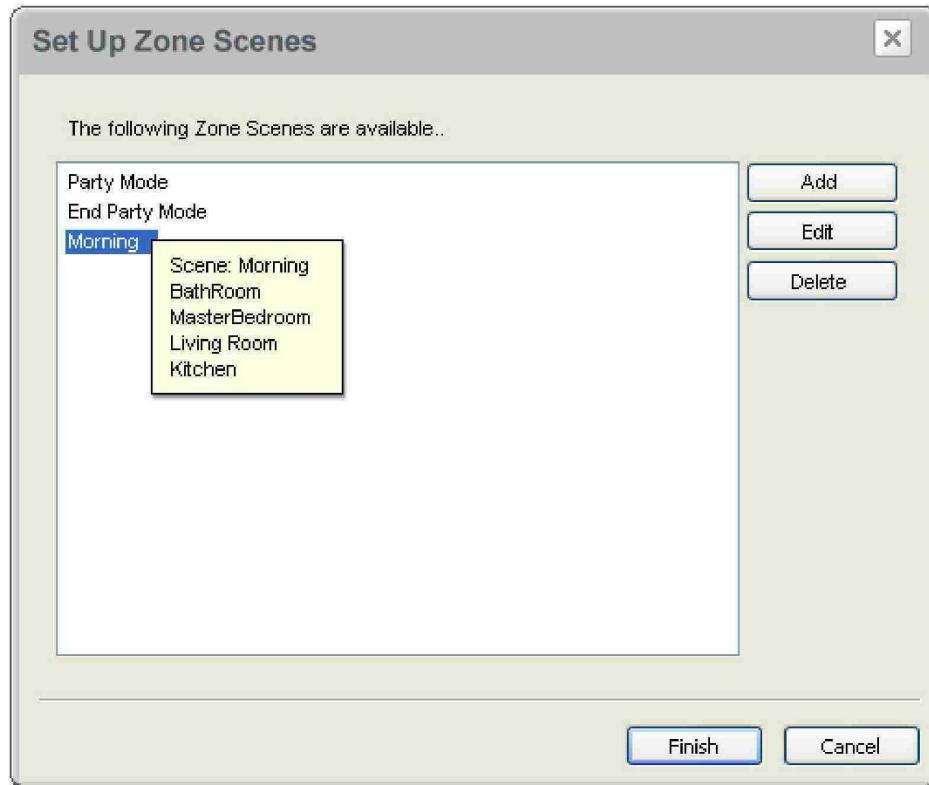
**3.2 Desktop Controllers**

Zone Scene Setup is available from the Zones menu on the DCRs.



“Set Up Zone Scenes...” is available from the Zones menu.

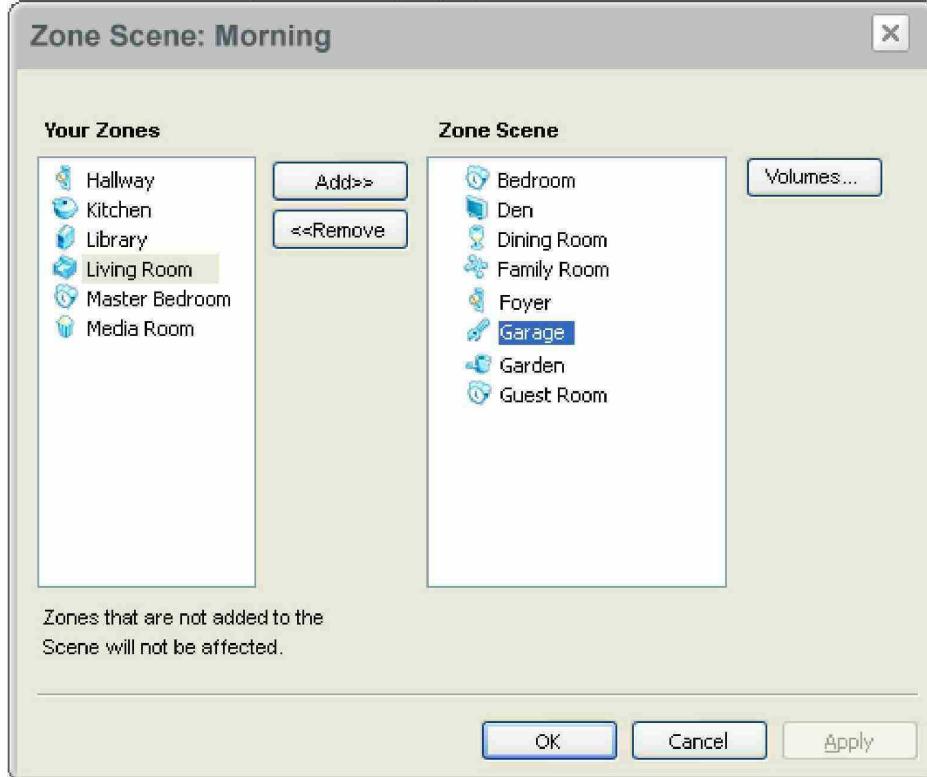
**Sonos UI Specification: Zone Scenes**



- Zone Scenes can be Add, Edited or Deleted
- The tool tip shows an overview of the zones that make up a scene

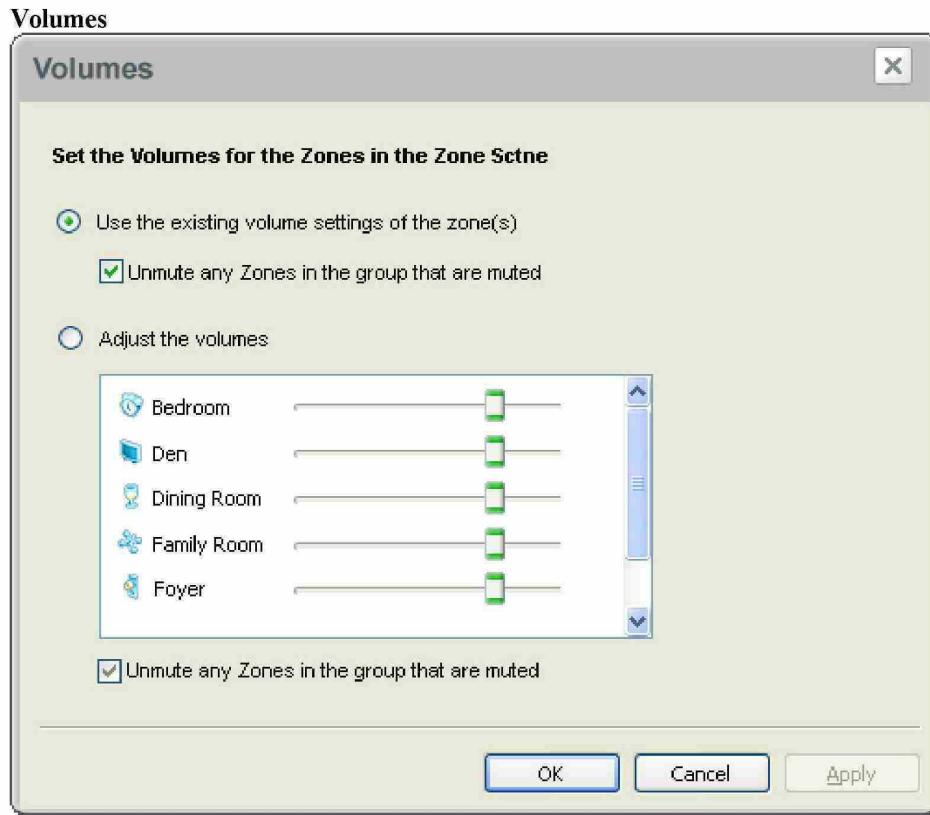
**Sonos UI Specification: Zone Scenes****3.2.1 Simple Scenes**

Each Scene consists of just one zone grouping.



- The panel on the left shows the available zones in the household.
- The panel on the right shows the Zones that will be grouped as part of this scene.
- The Add/Remove buttons move zones between the panels.
- Zones can be dragged between panels.
- The Zones that are not part of this scene will remain unaffected by the scene.

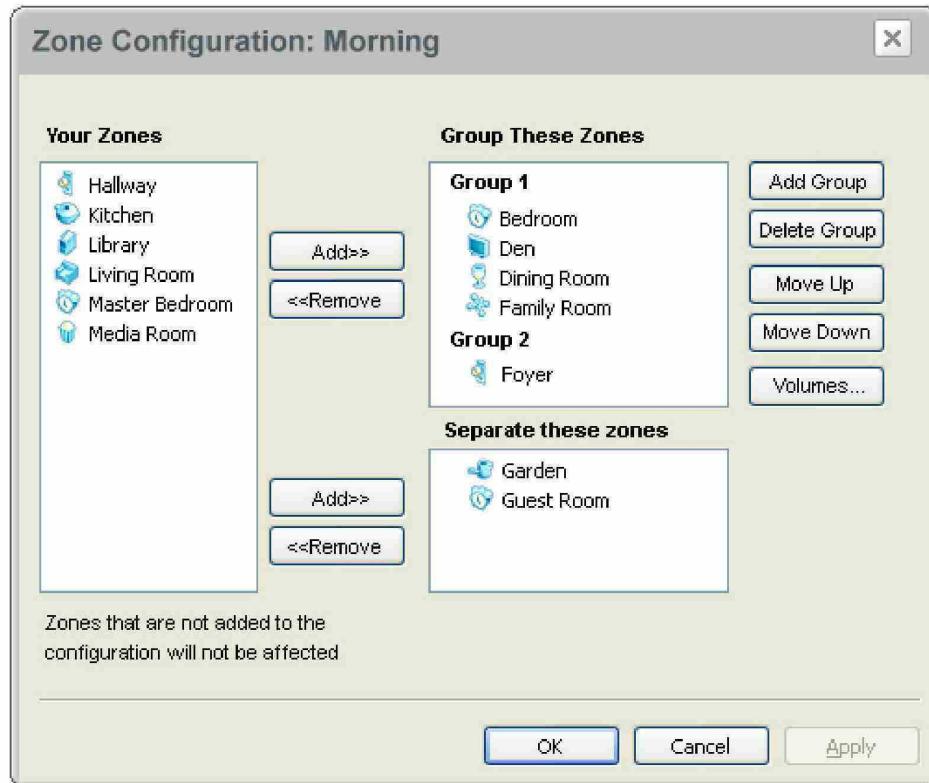




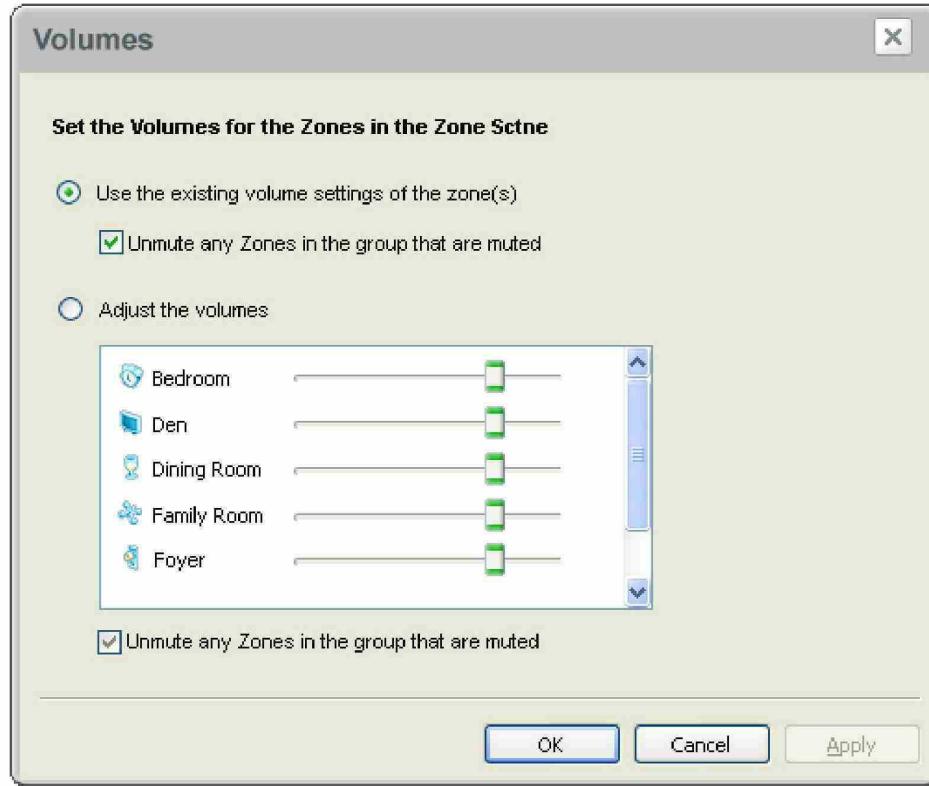
- The ‘Volumes...’ button allows the user to affect the volumes of the zones when a Zone Scene is invoked.
- The Zones can be set to retain whatever volume that they currently have when the Scene is invoked.
- Additionally the user can decide of Volumes should be unmuted when the Scene is invoked.
- Alternatively, the user can define the Volume of each zone in the Zone Scene.

### 3.2.2 Simple Scene (each scene makes one zone group)

Each Scene can consist of multiple groupings. In addition zones can be separated if they were part of a group before the scene was invoked.

**Sonos UI Specification: Zone Scenes**

- Left panel shows the available zones in a system
- The upper right panel shows the zones that will be grouped as part of this configuration.
  - Multiple groups can be created with the “Add Group” button
  - Groups can be deleted using the “Delete Group” button
  - Zones can be moved between groups
- The lower right panel shows the zones that will be actively separated when the scene is invoked (if they were part of any before).
- Zones can be moved from the left panel to either of the right panels using the “Add” buttons, or through drag and drop/
- Likewise, zones can be moved from either of the right side panels to the left panel using the “Remove” buttons, or through drag and drop.

**Sonos UI Specification: Zone Scenes****Volumes**

- The ‘Volumes...’ button allows the user to affect the volumes of the zones when a Zone Scene is invoked.
- The Zones can be set to retain whatever volume that they currently have when the Scene is invoked.
- Additionally the user can decide of Volumes should be unmuted when the Scene is invoked.
- Alternatively, the user can define the Volume of each zone in the Zone Scene.

### **3.3 Additional setup ideas**

Capture a Zone Scene from an existing setup in the Zone Menu. Right click on a current Zone group and have a menu item “Make this group a Scene”. (From Andy)

**Sonos UI Specification: Zone Scenes****4 Alternative Linking Methods****4.1 Multiple Select in Link and Drop Zone panels**

This feature is an adaptation of the Link and Drop Zone feature.

Currently, as discussed in the introduction of this document, the current Link and Drop Zones features allow the user to link and drop Zones one at a time. This feature would allow the user to link and drop multiple zones in one screen.

Using this methodology, the action Link and Drop zones can be achieved on one screen. In addition, because of the flexibility of this UI, Music can easily be moved from one zone to another.



- The list of zones in the screen above includes ALL the zones in the system, including the Zones that are already grouped.

**Sonos UI Specification: Zone Scenes**

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- User can check Zones that will be part of a zone group, and uncheck those that won't be part of a group
- Using this method it is possible to move music from one zone to another. For example, to move the music from the Living Room to the Kitchen.
  - User is playing 'Radio 1' in the Living Room only
  - From the Zone Menu, press the Zone Linking soft button
  - Check the Kitchen, uncheck the Living Room
  - Hit the OK button
  - Result – Radio 1 is now playing in the Kitchen and not the Living Room (without interrupting the music).

## **5 Related Ideas**

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### **5.1 Zone Scenes that play music**

In addition to the notion of Zone Scenes that contain information about Zone Groups and the Volumes of individual Zones in a group. It is also possible to extend the idea to enable specific music to be played when a particular Zone Scene is invoked:

For instance.

Wakeup Zone Scene should link Living Room and Bedroom, set their volumes and play “Wakeup Music” playlist (or a Radio station)

### **5.2 Relationship to the Alarm Clock**

The Sonos Alarm Clock/Music Scheduler allows a user to setup a Sonos system to play music in certain zones at certain times of the day.

In addition it is possible that an alarm clock can also invoke a Zone Scene.

For example. In a system with 4 Zones: Bedroom, Bathroom, Dining Room, Kitchen.

At the end of the day the user has all of the Zones linked into one group.

He has an alarm clock that is set to play National Public Radio at 7am and the alarm should play in the Bedroom and Bathroom, but not the Dining Room and Kitchen.

The Alarm is thus configured to invoke a Zone Scene that links the Bedroom and Bathroom into a group, but leaves the Dining Room and Kitchen out of the group.

**Sonos UI Specification: Zone Scenes****5.3 Compress Zones in the Zone Menu**

This concept is aimed at households that have more than a few ZonePlayers.

Current Design.



Zone Groups are shown linked together in a gray box. This is a good design for household with fewer than, say, 8 Zones. With more Zones however, a lot of scrolling is required to navigate between zones.

The design below shows how grouped zones are compressed so that they occupy a single item in the Zone Menu. The [+n] signifies the additional number zones that make up the group.



The individual zones in a group WILL show in the Zone bar on the Now playing Screen and Music Browse, as well as the link and unlink screens. These screens would be unchanged from v1.